



National Seasonal Assessment Workshop

Western States
and Alaska

Boulder, CO
April 24-26, 2007

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2007 National Seasonal Assessment Workshop for the Western States and Alaska

On April 26, 2007, fire, weather, and climate specialists convened at the National Oceanic and Atmospheric Administration Earth System Research Laboratory in Boulder, Colorado for the fifth annual National Seasonal Assessment Workshop. A seasonal significant fire potential forecast for the western states and Alaska was produced. This briefing document includes a description of existing climate forecasts, fuels conditions, and the influence on resource requirements.

Significant Fire Potential Forecast (May – August 2007)

The map below shows the significant fire potential forecast for May through August 2007. Significant fire potential is defined as the likelihood that a wildland fire event will require mobilization of additional resources from outside the area in which the fire situation originates. Areas highlighted as "Above Normal" are likely to require additional external resource mobilization during the forecast period.

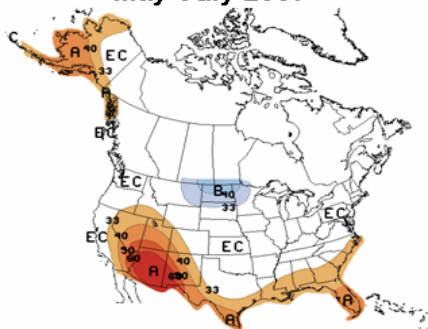


The workshop results indicate there will be above normal significant fire potential across much of the Southwest and California, portions of the Great Basin, Northern Rockies, Northwest, Alaska and the Southeast. Below normal fire potential is predicted for a small portion of the Southwest Area. The critical factors influencing significant fire potential for this outlook period are:

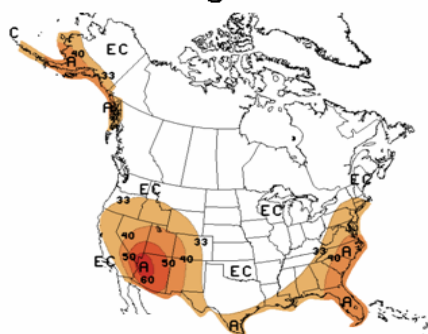
- **Drought:** Conditions are expanding and intensifying across large portions of the West and Southeast.
- **Early Fire Season Onset:** Low snowpack, warmer than average forecast temperatures, and early snow melt over most of the West will likely dry out timber fuels, cause early green-up, and bring an early onset of fire season.
- **Active Grassland Fire Season:** Abundant new and carryover (from 2005 and 2006) fine fuels across much of the West are expected to green-up and cure early, leading to an active and prolonged grassland fire season.
- **Resource Support:** National mobilization for resources is expected to be high due to the breadth and severity of the projected fire season.

Temperature Forecasts

May-July 2007

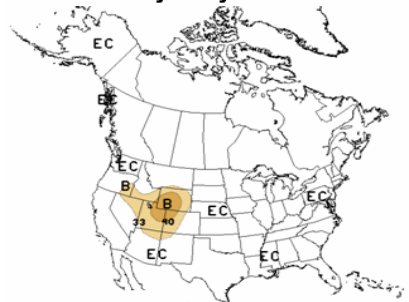


June-August 2007



Precipitation Forecasts

May-July 2007



June-August 2007



A = Above Normal
 B = Below Normal
 N = Normal
 EC = Equal chances of above,
 below, or normal conditions

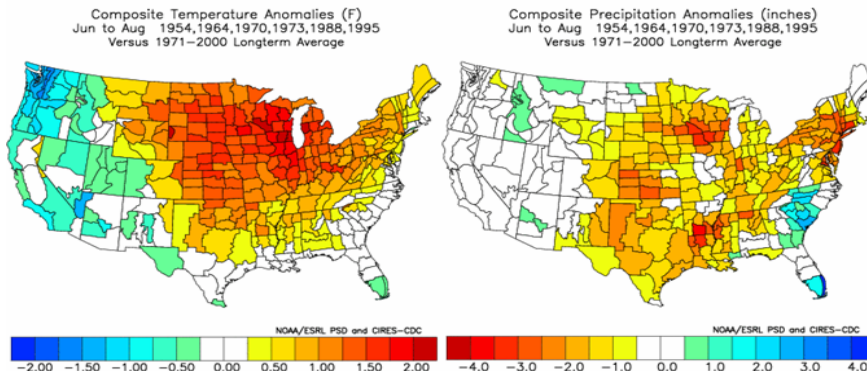
Numbers represent the probability of occurrence.

http://www.cpc.ncep.noaa.gov/products/predictions/long_range/lead04/off_index.html

Climate Conditions and Forecasts

Sea surface temperature (SST) anomalies in the equatorial Pacific currently indicate neutral El Niño Southern Oscillation (ENSO) conditions following a weak El Niño event of several months. Most of the statistical and dynamical forecast models are projecting cooler than average SSTs in the coming months leading into La Niña conditions. Due to the large spread of forecast values, there is presently considerable uncertainty associated with these forecasts in terms of the development, timing and magnitude of a La Niña. The official NOAA Climate Prediction Center forecasts (at left) are based on continued ENSO-neutral conditions. In the event that La Niña develops during the next few months, direct impacts on the 2007 fire season would be limited. One consequence might be a more westward shift of the North American Monsoon, with a tendency for the monsoon to be centered north and west of its typical position (more toward Arizona than New Mexico). Summer temperature and precipitation patterns for years with developing La Niña conditions (see below) exhibit generally above average temperatures east of the Rockies and below average to the west. These same composites indicate drier conditions over many areas east of the Rockies, but no well-defined pattern in the West.

Temperature and Precipitation Anomalies June – August for Years with Developing La Niña Conditions

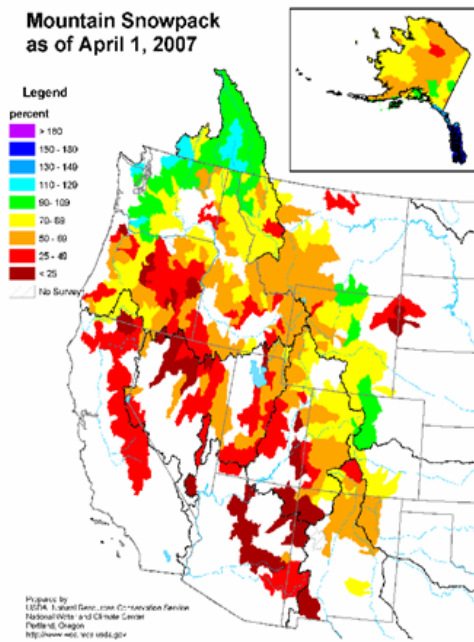


Temperature and Precipitation

Drought conditions have been expanding and intensifying over much of the West since last autumn. Many areas, including Alaska, have exhibited much below average snowpack through the winter and early spring months. Drought relief is not expected in these areas this summer.

The NOAA Climate Prediction Center seasonal outlooks for May-July 2007 (at left) predict a high likelihood of above average temperatures in the Southeast, Gulf Coast and Southwest, as well as southern and western Alaska. Increased likelihood of below average temperatures is predicted for the northern plains states. For June-August 2007, the likelihood of above average temperatures covers much of the West, Southeast, East Coast and southern Alaska. There is an increased likelihood for drier than average conditions over portions of the interior West.

Mountain Snowpack April 1, 2007



<ftp://ftp.wcc.nrcs.usda.gov/support/water/westwide/snowpack/wy2007/snow0704.gif>

average levels, especially in southeastern Washington and northeastern Oregon. Departure from average Normalized Difference Vegetation Index (NDVI) maps indicate spring green-up is earlier than normal in central Oregon and the Columbia Basin. Green-up is lagging in western Washington due to cool, moist spring conditions and in southeastern Oregon due to the ongoing drought and cool temperatures this spring. Predominantly dry lightning events that occur in areas of dry fuels during the summer tend to be the primary ignition source leading to significant wildfire outbreaks. Surges of monsoon moisture into the Northwest from the desert southwest are likely to be weaker than during 2006. This would tend to provide fewer lightning outbreaks for the Pacific Northwest lowering the potential for large-scale lightning ignitions and numerous wildfire outbreaks.

California: Virtually the entire state has received below average precipitation since October 2006, except for the extreme northwestern corner of California. The entire lower third of the state has received less than 50% of average precipitation since October 2006, with some areas on track for record setting dryness. Below average precipitation and the slightly above average temperatures are leading to earlier than average curing of grasses at lower elevations, especially in the north. This early curing of annual grasses, along with below average live and dead fuel moistures, will lead to an early onset of fire season in some areas. A severe January freeze caused significant dieback of native and non-native vegetation, especially in Ventura, Orange and San Diego counties. There is concern about the potential for large fires in these freeze-killed areas. Drought stress and recent occurrence of bug-killed timbered areas of the southernmost forests constitute further concerns. Prescribed fires and early season wildfires have confirmed lower than average 1000-hour fuel moistures. Opportunities for prescribed burning started earlier than normal, but an early start to the fire season could prematurely curtail burning operations.

Northern Rockies: During the winter, temperatures were above average across the Area with below average precipitation over most locations except in eastern North Dakota was observed during the winter months. As of mid-April, snowpack amounts averaged 75% of average in Montana and 55% of average in Idaho. Moderate long-term drought conditions exist across much of western North Dakota, Montana and Idaho. Spring precipitation is running above average across central and eastern Montana, which may produce robust green-up and add to fine fuel loads upon curing. Above average May temperatures forecast for Idaho and western Montana, along with light snowpack, may hasten the onset of fire season, especially at higher elevations. Above average temperatures and below average precipitation, especially in Idaho and western Montana, are forecast for the July through August period. In the event La Niña conditions develop this summer, signals for above average temperatures and below average precipitation would strengthen over the Area.

Fuels Assessment

Alaska: Snowpack for the past winter was predominantly below average, with the greatest snowpack deficits in the northern/central portions of the state. This same area had higher than average Canadian Drought Code values late last fall and is highlighted as abnormally dry on the latest U.S. Drought Monitor. Forecasts for May through August call for above average temperatures in western and southern Alaska through the outlook period. Areas of bug-killed timber, especially on the southwestern Kenai Peninsula and portions of the western Cook Inlet, are of special concern. The combination of low snowpack and warm summer conditions is expected to create above normal significant fire potential in portions of central and southwest Alaska. Normal season-ending rains are expected by mid-July.

Northwest: The Northwest experienced a generally wet winter from the Cascade crest westward. East of the Cascades, the rain and snowfall totals were near average in Washington and well below average in Oregon. The most significant precipitation deficits are centered over eastern Oregon and southeastern Washington. Earlier melt-off in precipitation deficient areas could lead to an earlier start to the fire season at lower elevations in eastern Oregon. Warmer than average temperatures and dry conditions forecasted for July and August will result in fire danger indices rising to above

Great Basin: A relatively dry winter and a return to drought conditions, combined with two previous wet winters, has left large amounts of carryover grass across much of the Nevada, western Utah and southern Idaho. Southern Nevada still has large pockets of cured standing cheatgrass from 2005. Below average winter snowpack, earlier than normal snowmelt and an early green-up at elevations below 6000-7000 feet will likely cause the onset of fire season to be 3-4 weeks early this year. Another active and prolonged grassland fire season is expected, especially if monsoon moisture is absent. High elevation areas are likely to have lower than average soil moistures and dead fuel moistures, especially in the north. Insect and frost killed vegetation will increase fire risk in affected timber and shrub regimes across the mountains of Idaho and mid- and upper elevations of Utah and Nevada.

Southwest: Above normal significant fire potential is expected to emerge in southeast Arizona to southwest Texas by mid-May and then shift westward into southern and western Arizona by mid-June. Abundant fine fuels exist over the entire area, with extensive herbaceous growth in the eastern half of the Area. There is a potential for larger and more active fires in southern and central Arizona due to significant growth of buffelgrass, which now provides fine fuel continuity in areas that were historically sparse. Rapid curing of abundant new herbaceous growth across southern New Mexico and western Texas will create a continuous fuel bed by mid-May. However, significant fire activity west of the divide is expected to be held off until June, because a weather pattern of progressive storm systems is expected to impact the western portion of the Area through late May. This pattern may bring unusually windy conditions, lowering the probability of lightning storms. Hot and dry conditions are then expected to develop in Arizona beneath a strong high pressure ridge from mid-June to mid-July. A strong initial monsoon surge is anticipated, with a trend for above average precipitation mainly over Arizona and below average precipitation further east.

Rocky Mountains: The Rocky Mountain Geographic Area has three major fuel concerns: (1) abundant fine fuel loadings in eastern Colorado, western Kansas and western Nebraska; (2) early green-up and early curing of fuels in the aforementioned regions, especially if La Niña conditions develop during the summer, bringing warm dry conditions to the eastern part of the Rocky Mountain Area; and (3) regions of bug-killed trees in the Colorado Rocky Mountains. Portions of the Area experienced rapid snow melt in March and early April however, recent storm patterns have brought additional precipitation and slowed snow melt, which should help fuels remain moist later into the spring in the higher elevation areas. Long-range forecast models predict warmer than average temperatures over the western half of the area and drier than average conditions, especially in Wyoming. Overall, current conditions and long-range forecasts suggest the Area will experience normal fire potential for the outlook period.

Eastern Area: Long-term drought remains in place across portions of the north central and northwest Great Lakes as of late April 2007. However, precipitation events across these areas through late winter and spring were frequent enough to curtail above normal significant fire potential in early spring, and to begin to alleviate some of the longer-term drought over these areas. Green-up was complete or near complete across the southern tier of the Eastern Area at the end of April. Overall, normal significant fire potential is forecast across the Area. However, short periods of elevated fire potential are likely across portions of the Great Lakes states prior to green-up. Soil moisture deficits in these states indicate that fires may require extensive "mop up" and peat fires may be problematic.

Southern Area: Overall, below average precipitation and above average temperatures are expected to dominate the weather pattern for much of the southeast, especially for southeastern Georgia and northeastern Florida. Consequently, above normal significant fire potential is forecast for these areas. In addition, above normal significant fire potential will intermittently spike for the western portions of Virginia and North Carolina during periods of below average rainfall, and low relative humidity will keep fuels dry into the first half of the period. There is potential for risks to decline during the latter half of summer, due to increased rain activity brought about by the possible emergence of La Niña conditions. Ultimately, moderate to heavy rainfall, likely from tropical activity, will be needed to relieve low water tables and stream flows caused by long-term severe drought conditions.

Resource Support

National mobilization for resources is expected to be high due to the breadth and severity of the projected fire season. In May and June, additional resource support is likely for the Southwest, California, Great Basin and possibly Alaska, due to an expected early onset of the western fire season. In July and August, fire potential should moderate in the Southeast, Southwest and Alaska due to summer thundershowers. However, significant fire potential is expected to spread into the Northwest and Northern Rockies, with continued resource demand from California.

2007 National Seasonal Assessment Workshop Summary

The main objective of the Fifth Annual National Seasonal Assessment Workshop is to improve information available to fire management decision makers. Other objectives include:

- Improving communication and cooperation between fire professionals and climate scientists.
- Improving interagency and inter-government (state, federal) information flow.
- Fostering the exchange of ideas and techniques for assessing fire potential and applying climate forecasts and products to meet fire management needs.

These annual assessments are designed to inform decision makers for proactive wildland and prescribed fire management, thus better protecting lives and property, reducing firefighting costs and improving firefighting efficiency.

Workshop participants, in consultation with other specialists unable to attend the workshop, considered a variety of factors when making their assessments. Significant fire potential outlooks are primarily based on interactions between climate factors, fuel types and conditions, long-range predictions for climate and fire, and the persistence of disturbance factors, such as drought-, frost- and insect-induced forest mortality. The main product of the workshop was a map forecasting significant fire potential for the eastern, southern and southwestern United States.

Discussions regarding forecast tools, fuel conditions and climate impacts contributed to the success of the 2007 National Seasonal Assessment Workshop; Tania Schoennagel (University of Colorado) made a noteworthy contribution to participants' understanding of the effect of beetle outbreaks on fire occurrence. Climate forecast discussions, led by Jim Wagner (NOAA Climate Prediction Center), Klaus Wolter (NOAA Climate Diagnostics Center), and John Roads (Scripps Institution of Oceanography Experimental Climate Prediction Center) increased awareness of the potential impacts of various climate patterns on the upcoming season. Discussions of forest and range considerations, lead by a team of participants from each Geographic Area, improved understanding of the current fuels concerns and conditions. Moreover, Canadian and Mexican participants in the workshop contributed to a more complete assessment of fire potential across North America, as well as improving cooperation between the three countries through sharing of methods, information, and perspectives.

The 2007 workshop was part of the fifth national assessment organized by the National Predictive Services Group (NPSG), the Climate Assessment for the Southwest (CLIMAS) at the University of Arizona, and the Program for Climate, Ecosystem and Fire Applications (CEFA) at the Desert Research Institute. Workshop funding was provided by the National Predictive Services Group (NPSG), and the National Oceanic and Atmospheric Administration (NOAA). The second North American Seasonal Assessment Workshop, which included participants from Mexico and Canada, was held in conjunction with this workshop. Other participating agencies are listed below.



Participating Agencies

Alaska Coordination Center
Bureau of Indian Affairs
Bureau of Land Management
California Applications Program
California Department of Forestry & Natural Resources
CLIMAS/University of Arizona
Climate Diagnostics Center
Cooperative Institute for Research in Environmental Sciences
Department of Interior
Desert Research Institute
Eastern Area Coordination Center
Eastern Great Basin Coordination Center
National Association of State Foresters
National Interagency Coordination Center
National Park Service
National Oceanic and Atmospheric Administration (NOAA)
NOAA Climate Prediction Center

NOAA Earth System Research Laboratory
NOAA National Weather Service
Northern California Coordination Center
Northern Rockies Coordination Center
Northwest Coordination Center
Rocky Mountain Coordination Center
Scripps Institution of Oceanography
South Dakota School of Mines and Technology
Southern Area Coordination Center
Southern California Coordination Center
Southwest Coordination Center
USDA-Forest Service
U.S. Fish & Wildlife Service
U.S. Northern Command
Washington Department of Natural Resources
Western Great Basin Coordination Center
Western Water Assessment